

THE IDENTITY OF *NOTHOLAENA BIPINNATA* SIM.

By E. A. C. L. E. SCHELPE.

(University of Cape Town.)

In his second edition of the "Ferns of South Africa", Sim (1915) described *Notholaena bipinnata* as a new species. Since then the identity of this species has been in doubt. In the first edition of the same work this fern was named *Gymnogramme cordata* Schl. var. *bipinnata*.

An examination of the material upon which Sim (1915) based his *Notholaena bipinnata* has led the present author to the conclusion that this species is founded on firstly an abnormal frond of *Ceterach cordatum* (Thunb.) Desv. and secondly on normal sterile and fertile fronds of *Notholaena inaequalis* Kze.

Holland's sterile frond, without rhizome, which Sim (1892) named *Gymnogramme cordata* var. *bipinnata*, is in the herbarium of the National Botanic Gardens, Kirstenbosch. This frond was obviously the subject of Sim's pl. 109, fig. 2, in his second edition. The label to this specimen bears the inscription, "Namaqualand (not found by me) BHH", initialled by B. H. Holland. Consequently, there are no grounds for Sim's assumption in his second edition where he writes, "Mr. Holland's collection contained many Rhodesian ferns, so the probability is that his specimen also was from Rhodesia instead of Namaqualand". This statement might have been coloured by the Southern Rhodesian origin of the co-type of *N. bipinnata*. The glabrous dorsal surface of the frond, the ventral surface of the frond clothed with lanceolate pale brown scales, together with the dark castaneous stipe, rachis and pinna costae, and decrescent base of the frond lamina, strongly suggest that this specimen is a frond of *Ceterach cordatum*. Although the scales on the ventral surface of this frond are smaller than is usual on normal specimens of *Ceterach cordatum*, they exhibit comparable cellular structure.

The present author's view is that the Holland specimen is an abnormal frond of *Ceterach cordatum* possibly grown under shaded and moist conditions. Judging from its bipinnatifid to bipinnate character, it seems probable that this specimen belongs to the more dissected var. *namaquensis* (P. & R.) Sim. Since no shade forms of this variety appear to exist in South African herbaria, this view will require experimental substantiation. However, a specimen from the Olifant River (*Schlechter* 7999) in the Albany Museum is intermediate between the more usual var. *namaquensis* and the Holland specimen.

The other specimen on which *Notholaena bipinnata* was founded, Eyles & Johnson 1020 from Bulawayo, Southern Rhodesia, is in the Albany Museum Herbarium, Grahamstown. It consists of a plant with a rhizome bearing both fertile and sterile fronds. The indumentum on these fronds and the shape of the fronds and pinnae indicate that this specimen is *Notholaena inaequalis* Kze.

Sim's description (1915) of the indumentum of the frond of his *Notholaena bipinnata*, "Upper surface glabrous or slightly hairy, lower surface clothed with pointed brown scales or woolly tomentum", becomes understandable when one realizes that Sim's species was based on a *Ceterach* with a glabrous dorsal and a paleaceous ventral surface and on a *Notholaena* with a pubescent dorsal and a tomentose ventral frond surface.

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SUMMARY.

Notholaena bipinnata Sim is based on an abnormal frond of *Ceterach cordatum* (Thunb.) Desv. and normal fronds of *Notholaena inaequalis* Kze.

REFERENCE.

- SIM, T. R. (1892): *The Ferns of South Africa*, ed. i. London.
SIM, T. R. (1915): *The Ferns of South Africa*, ed. ii. Cambridge.